* MAICABIA

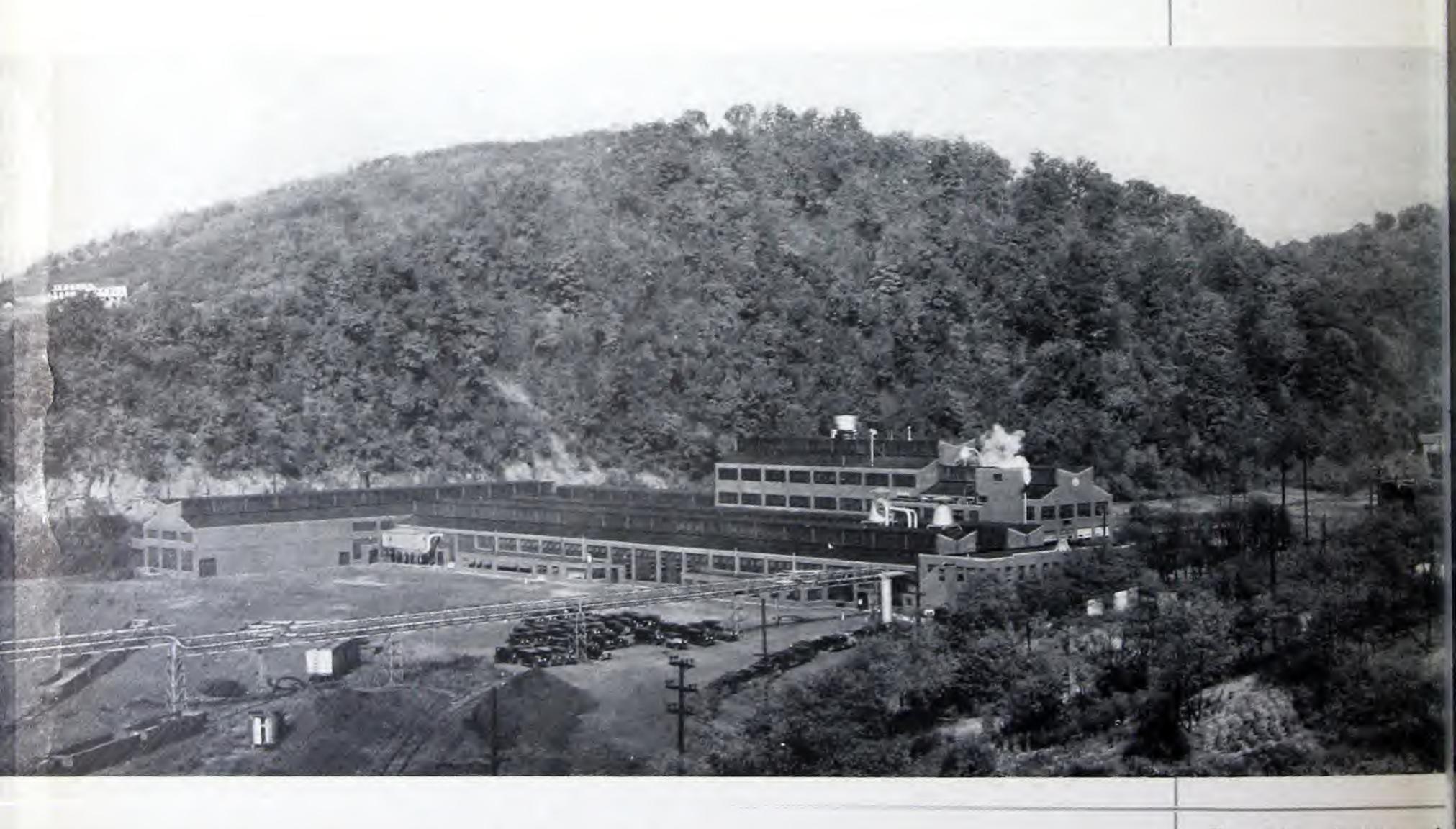
691,7

A DECORATIVE MATERIAL FOR

INTERIORS AND EXTERIORS

made by

WESTINGHOUSE ELECTRIC & MANUFACTURING CO.
MICARTA WORKS TRAFFORD. PENNA



The entire facilities of this modern plant at Trafford, Pennsylvania, are used in the manufacture of Westinghouse Micarta.

Decorative MICARTA

A Modern Material for Interiors and Exteriors

Anyone, looking around in homes, offices, stores—anywhere—these days is aware of new and interesting achievements in design. Architecture, furniture, interior decoration all give evidence that imagination has been stirred by new impulses. Fascinating things are being done that were never done before. What prompts this modern display of creative art? No single stimulus deserves all the credit certainly, but one of the foremost, beyond question, is the discovery of new possibilities in materials which modern industry makes available. One of the most interesting of these is the Westinghouse product MICARTA.

Technicians class Micarta among the "plastics". They describe it as a combination of synthetic resin and paper or fabric. They might add the information that it is made by putting tremendous pressure and heat on layers of resin-treated paper or fabric, causing chemical changes that transform the resins into permanently infusible, insoluble solids.

But the designer of furniture and of architectural exteriors or interiors is more interested in the physical characteristics that these manufacturing processes produce. He discovers that Micarta is stronger than castiron; that it has 90 per cent of the tensile strength of aluminum yet only half the weight. He finds it resilient and flexible, for application to rounded surfaces; but tougher than a fine hard wood, and even easier to saw or fit into place, because it has no "grain" and will not split or check. It is not affected by water, oil, dilute mineral acids and alkalies. Heat does not injure it up to 250° F.

But, most important of all, its processes of manufacture give it a glass-smooth finish in any color or design, making it ideal for interesting effects in the finest modern spirit.

Although the flexibility of its manufacturing methods permits remarkably natural reproductions of wood, marble, or opaque glass, the finest results with Micarta have been achieved by those who recognized that it was not a "substitute" for any other material, but a new material with its own individual beauties and advantages. With Decorative Micarta available in more than thirty-two standard colors and designs, the basic field of application lies in creating new decorative effects rather than in imitating the old.

Decorative Micarta is designed for two principal classes of application, veneering and paneling. Furniture, stores and office equipment, wainscoting, ceiling work, bases, chair rails, filler boards, etc. belong to this first classification. For veneering purposes Micarta sheets are supplied in thicknesses of $\frac{1}{16}$ in., $\frac{3}{32}$ in., and $\frac{1}{8}$ in. in standard sizes of 48 in. x 96 in., 36 in. x 72 in., and 48 in. x 48 in. The sheets may be glued or cemented to plywood, wood compositions and metal, or molded to other plastic materials as required.

Paneling applications include construction work of all kinds, such as wainscoting and partitions. In the case of certain colors and kinds of Micarta it includes store fronts, signs and other exterior work. In shipbuilding and airplane construction both the veneer and panel have been used successfully.

For paneling applications Micarta is supplied in three forms: Micarta Preswood, $^5/_{32}$ in. and $^9/_{32}$ in. thick; Micarta Wemcore (a specially-treated core material developed and used by Westinghouse) $^5/_{32}$ in., $^1/_4$ in. and $^11/_{16}$ in. thick; and Micarta Asbestos $^1/_4$ in. and $^7/_{16}$ in. thick.

Application data and descriptive literature are available on each of the various uses of Micarta.

STANDARD DESIGNS COLORS AND PATTERNS Micarta Je corative /

MAHOGANY DESIGNS



843 Mahogany Dark Brown Straight Grain



801 Mahogany Dark Red Straight Grain

WALNUT DE:



805 Walnut Dark Straight Grain



835 Walnut Dark Semistraight Grain



804 Walnut Dark Burl

COLORS AND SHADES



818 Crimson (Munsell Scale R 3/10)



868 Chinese Red (Munsell Scale R 3.5/12)



Yellow (Munsell Scale Y 8/12)



832 Medium Green (Munsell Scale GYG 3/4)



820 Deep Green (Munsell Scale G 2/2)



848 Blue (Munsell Scale PB 2/10)



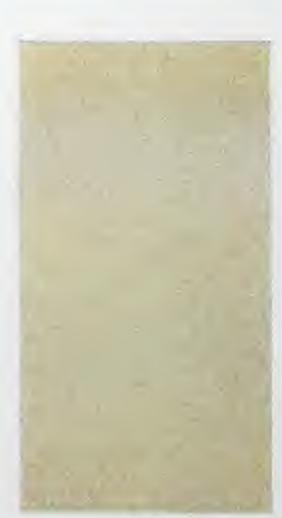
862 Dark Brown (Munsell Scale YR 3/6)



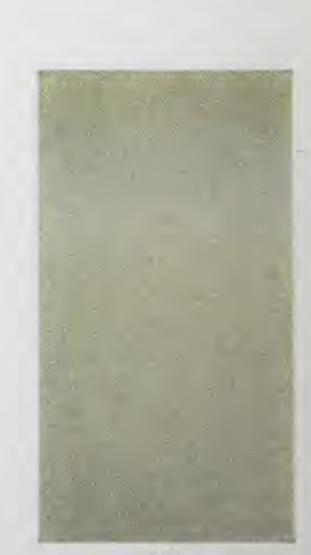
861 Natural, Tan to Brown (Munsell Scale YRY 4.5/9)



864 Bisque (Munsell Scale YR-Y 8/5)



867 Sahara (Munsell Scale YR-Y 7/3)



865 Dove (Munsell Scale Y 6/2)

GNS



Walnut Light Straight Grain



OTHER WOOD DESIGNS



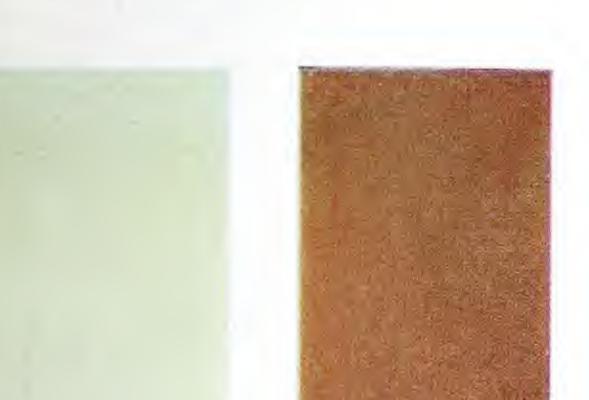
Curly Maple



White Oak

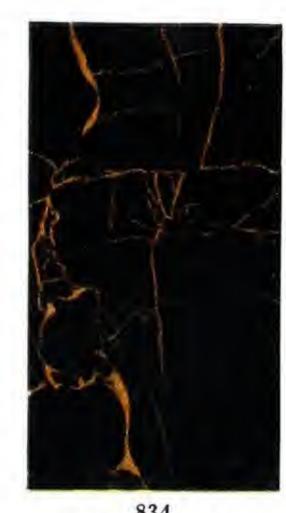


Ebony



Brown (Munsell Scale YR 4/4)

MARBLE DESIGNS



Black and Gold



Verdi Antique



Cardiff Green



Belgian

Surf Green (Munsell Scale GY 8/3)

Allegheny (Mun-ll Scale GY-G 6/3)



White

TAPESTRY DESIGNS



Small Flower



Tulip



Japanese Garden



Gold Web

[BLANK PAGE]





Decorative

MICARTA

IN RESTAURANTS . DINING ROOMS

TEA ROOMS . TAVERNS . BAR ROOMS

GRILLS*



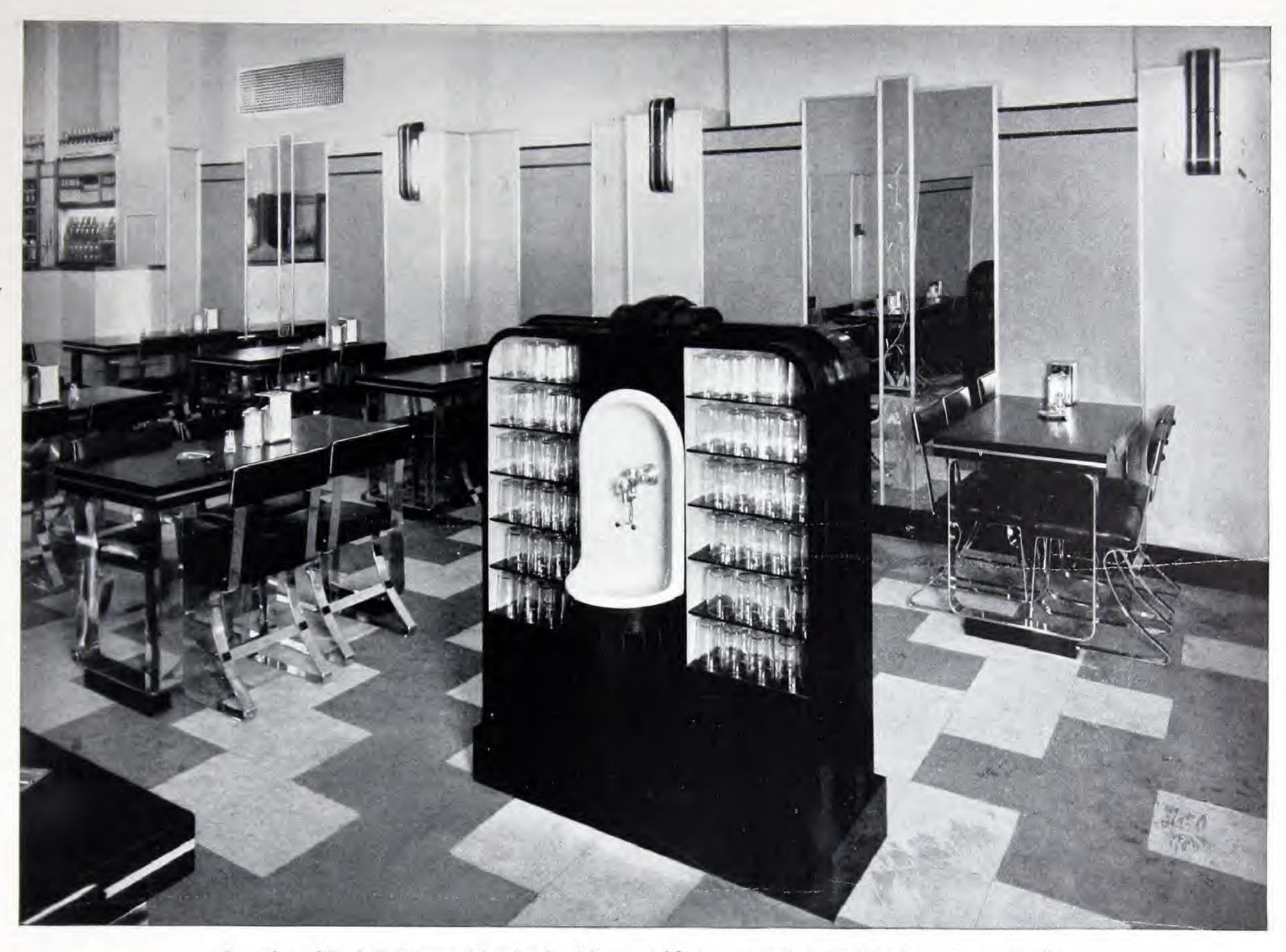
Practically any design can be made on Micarta with metal inlays.

Good food is only a part of what it takes to make a restaurant successful. Most patrons nowadays expect lunch or dinner to be an experience in which good food, prompt, attentive service, and attractive surroundings all combine to produce a pleasurable interlude in routine workaday affairs. Folks like to

Fountain Grill, Gimbel's Department Store, Pittsburgh, Pennsylvania. Table tops and murals are of Micarta with metal inlays.

be seen in a setting of colorful good taste. And food or drink is always more inviting if the scenery that goes with it is also inviting. All of which means that the right stage setting is one of your best allies in providing those well-filled tables that inspire your chef to do his best week after week.





Aurach and Perl, Baltimore, Maryland. Micarta table tops, paneled drinking fountain and walls.

Micarta is an excellent material with which to achieve these desirable effects. There are many beautiful colors and patterns from which to choose the combination that exactly fits the atmosphere of your restaurant, tea room, bar room or grill. And the completed effects are perfectly in keeping with modern ideas of style and good taste.

Yet it must not be concluded that beauty and distinctive decorative patterns are all that Micarta offer. More important in many ways are Micarta's durability and low up-keep. Micarta is given a permanent finish at the factory. It will keep its good looks in spite of spilled alcohol, cleaning compounds and hard knocks. It will not wear out for a long time—just how long we cannot say, but the first table tops are now five or six years old and are still in excellent condition. For many years it has been used in Westinghouse Research Laboratories to cover table tops because hard knocks, acids and alkalies do not destroy its surface as they do other materials.

In a large New York hotel, Micarta is saving money in an unexpected way. After dinner the cloths are whisked from the tables and drinks are served the remainder of the evening on glistening Micarta table tops. Wooden tops were neither handsome enough nor permanent enough to stand such exposure and fresh table cloths were needed every time drinks were served—and spilled. Naturally, laundry expenses are now much less with the Micarta tables.

Micarta is less noisy than marble or glass. Then, too, a glass accidentally bumped down on a Micarta table top is not likely to break.

Micarta is less expensive than most other materials commonly used for table tops, soda fountains and

bars. It compares in first cost with the best grades of wood veneer, but because it will never need refinishing it actually costs less than wood in the long run. Also wall decorations of Micarta are equally economical in this respect.

The application of Micarta to plywood, and other surfaces is simple and can be done successfully by any furniture or fixture manufacturer or cabinet maker. Ample stocks of Decorative Micarta are carried in warehouses in practically every section of the country and are obtainable quickly and easily by manufacturers of this class of equipment.

Application data are available to those interested in recommended installation methods.

Harmony Cafeteria, Chicago, Ill. Micarta table tops and Murals.

DMF-5638

Filing No. 63-520

Printed in U.S.A.



MICARTA APPLICATION DATA

METHODS OF GLUING MICARTA TO WOOD AND TO STEEL

1. PREPARING GLUE MIXTURES

WOOD—Where work will not be exposed to heat or moisture use Westinghouse Compound No. 573, or casein glue.

Westinghouse Compound No. 573 is a very high grade casein glue and gives very satisfactory results in gluing Micarta to wood. For the convenience of customers, it is put up in containers ranging from one to 300 pound sizes.

Where work may be exposed to heat, or moisture except under extreme conditions such as in refrigerators and outside applications, use Westinghouse Compound No. 573, or a good grade of water-proof casein glue.

For refrigerator and outside applications use Westinghouse Compound No. 573 with copper salts in the amount of 3% of the weight of the dry glue added, or a good grade of water-proof casein glue with copper salts added in the proportion specified for Westinghouse Compound No. 573.

Westinghouse Compound No. 573 is practically unaffected by ordinary climatic conditions, or by immersion in cold water. The addition of copper salt in the proportion specified, renders it impervious even to boiling water.

Westinghouse Compound No. 573

- 1. Weigh out 2 parts of water and place in mixer.
- Weigh out 1 part of Westinghouse Compound No. 573 and add gradually to the water while the mixer is running.
- Mix thoroughly, letting mixer run rapidly until every particle of the glue is wet and the mixture has become stiff. Do not add more water at this time.
- 4. Let mixture stand for 30 minutes, by which time the mixture should become thin.
- 5. Stir well for 10 minutes. The glue should then be ready for use.
- 6. Should the glue become too thick, add sufficient water to obtain proper consistency.
 The glue must be entirely free of lumps before removing from mixer.
- 7. Caution
 - (a) Mix the glue fresh every day.
 - (b) Do not use hot water.
 - (c) Do not mix in brass, aluminum or copper vessels.

Westinghouse Compound No. 573 with Copper Salt Added

 Mix 100 parts of Westinghouse Compound No. 573 with 200 parts, by weight, of water as prescribed above. 2. Dissolve 3 parts by weight, of copper salt (copper sulphate or copper chloride) in 50 parts, by weight, of boiling water and pour into glue mixture in a thin continuous stream, stirring vigorously during the addition of the copper solution and for several minutes thereafter.

Casein Glue and Water-Proof Casein Glue

Prepare in same manner as prescribed for Westinghouse Compound No. 573.

Water-Proof Casein Glue with Copper Salt

Prepare in the same manner as prescribed in adding copper salt to Westinghouse Compound No. 573. Estimate 65 sq. ft. of glued work (Micarta to wood) per gallon of Compound No. 573, mixed 2½ lb. of dry glue per gallon mixed compound.

In small work or when other means of application are not practical, the glues herein recommended may be applied by brushing. In larger work a glue spreader is recommended.

When using a glue spreader, set the machines to give a thin uniform coat over the entire surface of the rolls. Where hand brushing is employed use short, quick strokes of the brush.

STEEL—Use Westinghouse Compound No. 574 or Bakelite Cement, AC-6052, which come ready for use. Estimate 60 sq. ft. of glued work, (Micarta to steel) per gallon of Compound No. 574 when applied by spraying.

In small work or where other means of application are not practical, the glues recommended here may be applied by brushing. On work larger than 18 inches square the use of a sprayer is recommended. These glues dry very rapidly and show a tendency in large work to roll up in small pellets under the brush. This must be avoided to obtain best adhesion.

When using a sprayer, apply the glue in a fine uniform mist and pass rapidly over the work from side to side, over-lapping the spray just enough to insure a uniform coat until the entire area has been covered. An "AV" type De Vilbiss sprayer gives good results with these glues. Where hand brushing is employed use short, quick strokes of the brush.

2. PREPARING SURFACES FOR GLUE

WOOD—Remove any paint, shellac, varnish or other finish to the clean bare wood. Fill any holes, cracks or crevices with putty made of wood, flour and glue. Surfaces must be smooth, uniform, dry and clean.

STEEL—Have the surface smooth and uniform but not polished, and free of rust, grease or other foreign materials.

sectional table-tops or sections of Micarta-Plyboard should be jointed and held together by wood splines, or by dowels. In either case, dowels or splines must be located accurately. The dowel-pin or spline should not be less than 3/8 in. diameter or thickness, and should extend into the wood core of the sections to a depth of at least 1½ in. Splines or dowel-pins should preferably be of hard wood, and held in place with water-proof casein glue.

Use of splines should be supplemented by woodscrews inserted from the bottom of the panels. When dowel-pins are used, they should be supplemented by a brass or other non-corrosive metal plate secured across the joint by wood screws on the bottom of the panel.

The wood at the joint of the two sections should be veneered, or made waterproof by some suitable paint, such as aluminum.

MICARTA—Wire brush or sand until the surface resin is removed. For wire brushing use a stiff brush revolving at about 1800 rpm. Sanding can best be done on a sanding machine, but may also be done by hand with a medium No. 4 or No. 5 emery or sand paper. Hand sanding is slow, and less uniform than machine sanding. Any ridges or depressions left in the surface of the Micarta may show on the surface of the finished piece. Remove any dust, grease, etc., by wiping with a cloth wet with gasoline, benzol or benzine.

3. CUTTING MICARTA TO SIZE

In order to compensate for any "skidding" of the Micarta veneer, it is preferable to cut to oversize dimensions following the surface preparation and trim to exact dimensions after the glue has set in the assembled work.

Thin Micarta used as veneer lends itself to the use of wood working tools of a good grade of steel. Micarta can be sawed with a close set, fine cut saw. In thin veneer up to \(\frac{1}{16} \) in. thick, it can be cut with a paper-knife cutter or sheared with alligator power shears. Micarta can be drilled with a wood drill or auger bit, either power or hand driven, and can be chiseled or shaved with a draw-knife. Edges can be planed, mitered or beveled, using a hand or power plane, or jointer.

4. SIZING SURFACES

wood—Apply a thin, uniform preliminary or sizing coat of glue, prepared as directed, to the edges and end grain, and allow to dry thoroughly. This serves to fill up large end-grain pores in the wood, and slight unevenness in the prepared surfaces. This is necessary for maximum adhesion.

STEEL—Apply a thin, uniform coat of glue to the prepared surfaces of the Micarta and steel and allow to thoroughly dry in open assembly (separately). It is preferable to heat the sized pieces at 75° to 80° C. (165° to 185° F.) for 20 minutes to drive off the solvent and then allow to cool to room temperature, rather than to air-dry. Under the latter condition allow a period of at least one hour for drying. This preliminary coating or sizing is essential to obtaining maximum adhesion in the finished piece.

5. APPLYING MAIN GLUE COAT

wood—Where the surfaces have been sized, sand slightly to remove any glue lumps, dirt, etc., before applying main glue coat. Apply a thin uniform coat of glue to the prepared surfaces.

STEEL—Sand the sized surfaces lightly to remove any dirt or glue lumps and apply a second thin uniform coat of glue. The total glue film thickness should not exceed 0.006 in. A film thickness of 0.002 in. to 0.003 in. gives maximum adhesion.

Micarta must not be touched by No. 573 Compound, casein glue, or other alkaline materials as alkali attacks the metal of the inlay. When using No. 573 or other casein glues, protect the metal of the inlay by coating it with clear pyroxylin lacquer. Best results in lacquering are had by spraying, two coats being needed. If brushed on, use three coats. Allow each coat to dry thorough. ly. After the gluing operations are completed wipe the lacquer off with a soft cloth soaked in acetone or lacquer thinner.

6. DRYING PREPARATORY TO ASSEMBLING

WOOD—Where Westinghouse Compound No. 573, or casein glue is used, it is necessary that the glue coated surfaces remain in open assembly (unassembled) until the glue has reached the proper condition for assembly. This condition is indicated when the glue is tacky and no longer flows when the pieces are tilted.

CAUTION—Care must be taken to assemble the work and apply pressure while the glue is still tacky over the surface of the glue-coated members.

steel—After applying the second or main coat of glue to both the Micarta and steel, it is necessary that the pieces remain in open assembly (unassembled) until the solvent has evaporated. This may best be accomplished by heating at 75°—85° C. (165°—185° F.) for 20 minutes. The work should then be quickly assembled and pressure applied.

Air drying at room temperature may also be employed but the joint will not be as strong as that obtained where heat is used as prescribed above. The time required for drying at room temperatures will vary according to climatic conditions and will range from approximately 10 minutes at 30° C. (86° F.) and 38 per cent relative humidity to possibly 30 minutes or more at 10° C. (50° F.) and 75 per cent—80 per cent relative humidity.

The proper time for assembling and applying pressure under the latter method of evaporating the solvent, is at the moment the glue has passed

from the extremely tacky stage to a point where it is barely tacky.

Satisfactory results may also be obtained by thoroughly drying the glue in open assembly and then assembling and applying heat and pressure. In such instances heat the assembled work under pressure for 2 hours at 75°—85° C. (165°—185°F.).

CAUTION—Care must be taken to insure that glue-coated surfaces are aligned exactly before coming in contact with each other. They cannot be adjusted after contact is made.

7. PRESSING

Cover the top surface of the Micarta with a thin, smooth sheet of paper to prevent the Micarta sticking to the pressing plates. Apply a pressure of 50 to 100 pounds per square inch evenly over the entire surface area. Higher pressures have a tendency to squeeze out the glue producing a "starved" joint, while too low pressure fails to give good surface contact. For commercial practice with large flat work, hydraulic or toggle presses with suitable gauges should be used. Where this is not practical, use clamps. In all instances, solid pressing plates or backing with true surfaces are essential.

wood—Under normal conditions pressure may be removed after 4 hours on panels, and after 1 hour on veneered edges. In cold or damp conditions, six hours under pressure is recommended for panels, and two hours for veneered edges. After removing pressure, allow to stand for 24 hours before using. Maximum strength will not be reached for five days.

STEEL—Pressure may be removed from the assembled piece after one hour where the work has been assembled and pressed at room temperature. Where heat has been employed, keep pressure applied until the assembled piece has reached room temperature. In no instance should pressure be removed within a period of one hour after assembling. Where the glue has been thoroughly air-dried before assembling and heat applied after assembling, the pressing period should exceed 2 hours. (See last paragraph under "Drying preparatory to assembling and pressing").

8. HANDLING OF JOINTS AND EDGES

- (a) In cases where adjacent surfaces are to be covered with Micarta the joint may be made either by overlapping the Micarta or by butting of beveled edges. In the case of "overlapping" the Micarta on the most prominent surface should cover the edges of the Micarta on the less prominent surfaces.
- (b) If more than one piece, or sheet of Micarta is used on the same surface, or plane, the Micarta must be sanded to a common thickness and the edges to be butted must be machined true and smooth.

(c) Where edges are to be covered with Micarta the work should be done before gluing other surfaces. Exposed edges of Micarta may be stained to match surface color by use of standard air-dry stains.

9. CLEANING

WOOD—Remove any glue stains or spots with warm water and mild soap, using soft cloth as mop. Rinse with clear water, and dry with a soft, clean cloth. To allow panel to dry by evaporation causes streaking.

STEEL—Remove any glue stains or spots by rubbing lightly with a cloth wet with benzol, gasoline, or benzine.

10. MACHINING MICARTA-STEEL

In flat Micarta-Steel work, the finished piece can be trimmed to size by means of alligator power shears or power driven hack-saw having not over 150 strokes per minute. If necessary, sawed or sheared edges can be smoothed with a file, or sanding machine.

11. VENEERING WITH INLAID MICARTA

When Inlaid Micarta is to be veneered on a table top or edge, the design or pattern must be properly located and aligned on the backing.

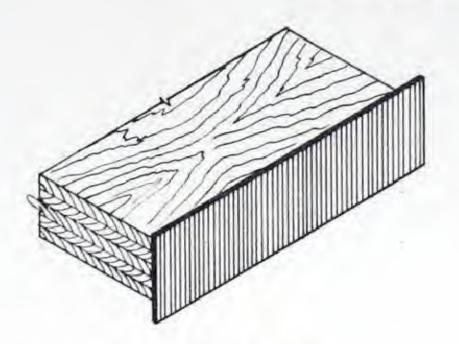
Procedure in applying Inlaid Micarta is the same as with ordinary Micarta, except that guide, or stop strips, and blocks of wood, must be used to insure proper alignment of the inlay design during the gluing operation. Also, metal inlay must be protected from the effects of casein glue by pyroxylin lacquer, as previously outlined. The lacquer should be applied and allowed to dry thoroughly before starting the gluing operation.

When Inlaid Micarta used on edges bears a horizontal pattern, i.e., stripes or lines that must be paralleled with the plane of the panel top; guide, or stop strips of wood must be used, properly rabbetted out to accommodate the Micarta "overhang". These wood strips are to be nailed or clamped to the top or bottom surface of the table top or panel, and are to extend out from the edge enough to serve as a stop for the Micarta. When the Micarta is being applied, its edge should be pressed against this guide strip, and then clamped firmly in place. These guide strips may be removed after one hour.

When the Micarta carries a vertical design with no strongly-marked horizontal lines, the pattern of the inlay may be aligned and held in position by the pressing clamps alone. After the edges have been veneered and dressed, the Micarta for the top and bottom surfaces of the table top or panel is applied, the Inlaid Micarta for the top surface being carefully positioned or aligned, and held in place during the pressing operation by wood blocks.

* OPERATIONS IN MICARTA VENEERING

NOTE: INLAV PLATE TO BE VENEERED SHOULD BE ONE INCH LONGER EACH DIMENSION.



FIRST STEP

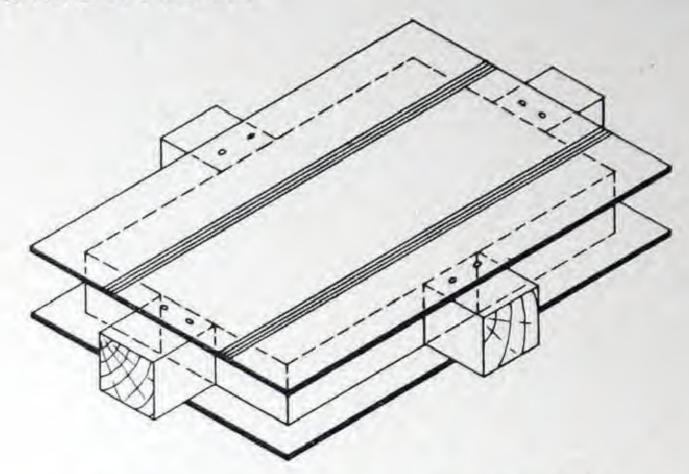
¿LUIN¿ ED¿E STRIPS

ED¿E STRIPS ¿LUED TO

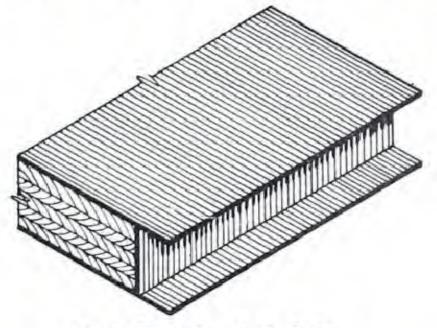
EXTEND APPROX. %6" ABOVE

AND BELOW FACE OF CORE.

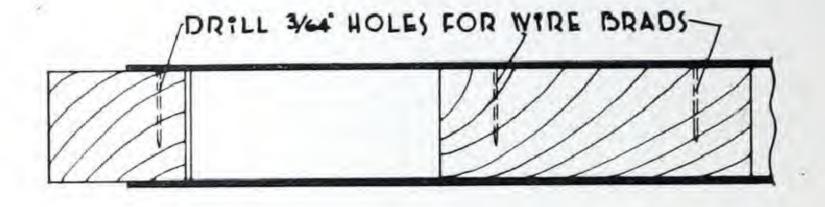
WHEN DRY, PLANE FLUSH.



HELD IN ALIENNENT BY USE OF WOOD BLOCKS.

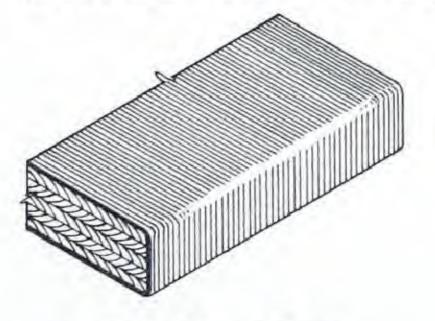


SECOND STEP
LLUING TOPAND BOTTOM SHEETS

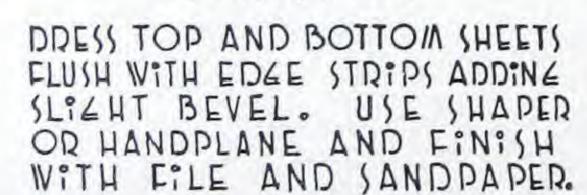


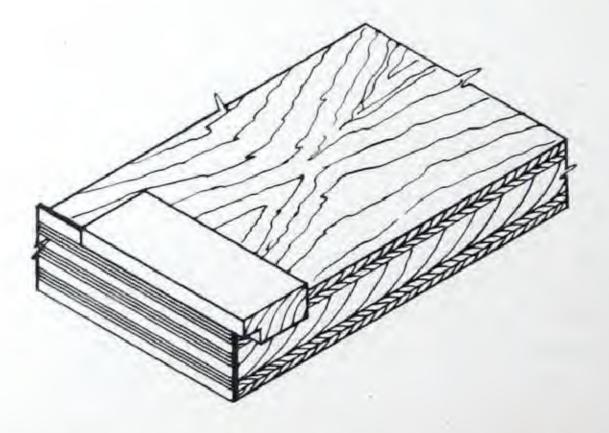
DETAIL SHOWING BLOCKS HOLDING MICARTA IN PLACE

CUT MICARTA SHEETS L'OVERSIZE TO LIVE APPROX. L'OVERHANE ON ALL EDLES TO TAKE CARE OF SLIPPALE IN LLUINE.



THORD STEP FINISHINE





RABBETED WOOD STRIP USED AS STOP AND EUIDE WHEN ELUINE EDEE STRIPS WITH HORIZONTAL INLAY.

Decorative

MEARIA

IN STORES · HOTELS · HOSPITALS

THEATRES · PUBLIC BUILDINGS



Office of the M. H. Renkin Dairy, Brooklyn, N.Y.

Some buildings must continue to look their best under difficulties. Through their lobbies, corridors, or individual rooms flows a stream of guests or customers. Hotels, for instance, must look well-groomed no matter how boisterous, gay, or careless the throngs within their walls.

And hotels have found Micarta to be economical.

Plate-glass tops on dressers, tables, and telephone stands are broken frequently. Micarta provides the desired decorative effect without the danger

of breakage and is not injured by spilled liquids and cleaning compounds. Walls of Micarta are attractive, easy to clean, and practically indestructible. The surface finish being permanent, Micarta walls require only an occasional cleaning, and the economy of upkeep is one of the important considerations.

Office desks and counter tops are greatly improved with the top surface of Micarta. The writing or working surface equals that of plate glass withMicarta furniture, Hotel Victoria, New York City.



out the reflected glare and danger of breakage.

Decorative Micarta panelling makes excellent partitions and wainscoting. It is durable, attractive, and fire resistant.

In hospitals, more than in any other field, the sanitary, non-absorbing surface of Micarta and its resistance to antiseptics and alcohol and other chemicals is extremely important. Here, Micarta is a protection as well as a decorative finish.

Theatre entrances and lounging spaces can be handsomely decorated with Micarta panels at reasonable cost. Metallic inlays molded into the Micarta itself can be made to the designer's individual pattern.

The uses of Micarta in buildings and construction work are almost without limit. It has been used for wall panels, partitions for offices, conference rooms, for baseboards, window sills and frames, and for

Aurach and Perl, Baltimore. Inlaid Micarta showcase and shelves.





Wooden paneling in the BEFORE Colombo Building, San Francisco, before Micarta was installed.

Colombo Building, San AFTER .. Francisco, after Micarta Wall Paneling was installed.

elevator cabs and doors. These are only a few of the possible applications.

Buildings and offices that present an attractive, clean, up-to-date and distinctive appearance are easier to rent and to keep rented. For prospective builders and those contemplating extensive repairs or remodeling, Micarta is a practical, low cost finishing material not to be overlooked.

Application data are available to those interested in recommended installation methods.

Nursery Ward of the St. Francis Hospital, San Francisco. 40 stalls in this ward were surfaced with Micarta, giving better resistance to spilled medicinal liquids.





MICARTA APPLICATION DATA

INTERIORS

MICARTA COMBINATION PANELLING—Micarta Presdwood and Micarta Wemcore—is an ideal material for all types of interior wall panelling, wainscoting, and partitioning.

Micarta panelling may be applied to walls and ceilings by any of several methods, all of which are considered good practice. However, we particularly recommend the following methods which have been proved in practice and may be relied upon to give good results.

Type "A" construction involves the application of these types of panellings direct to plaster walls.

Type "B" construction involves the application of Micarta panelling in new construction upon plyboard, applied direct to studding.

In both cases, it is advisable to use a mastic (See paragraph "Mastic") where Micarta presdwood or Micarta Wemcore of $\frac{1}{8}$ " to $\frac{5}{32}$ " thicknesses is used. It is not necessary to use mastic where either type of panelling $\frac{1}{4}$ " or thicker is employed.

moldings. Joints in the Micarta are covered wall covering. Joints in the Micarta are covered with wood or metal moldings which are fastened to 1 in. by 2 in. grounds, embedded in the wall for this purpose. In new construction the grounds are fastened directly to the stud wall or masonry and the area between the grounds is filled in with plaster, or other selected base material, and brought out flush with the face of the grounds.

In covering an existing wall, the grounds can be attached to the old surface by toggle bolts or plugs, and the area filled in and brought out flush with the grounds as described above. The grounds can also be let into grooves or chases cut into the old wall and thus eliminate the need for additional wall material to provide a base for gluing.

In all cases care must be taken in placing these grounds as they not only provide nailing material for the retaining strip of the metal molding, but they also straighten the wall surface into a true plane.

Since the design of the wall depends greatly on the location of the moldings, the location of the grounds should be carefully laid out beforehand. Grounds should be placed not over three feet apart and in all cases must be placed where a joint occurs in the Micarta. Joints, of course, will be determined by the size of the sheets or by the design.

The track or retaining strip into which the metal molding is finally snapped, is nailed to the grounds before the Micarta panels are applied.

Chalk lines should be snapped on the grounds to guide the location of the molding track.

After the tracks are in place the wall is ready to receive the Micarta panels which are cut to fit between the molding tracks, allowing $\frac{1}{16}$ in clearance on all four sides for expansion and contraction of the wall. After the Micarta panel is cut, it should be tried in the area it is to cover and checked for clearance.

MASTIC—Westinghouse Compound or mastic No. 6499 is recommended as a mastic. Apply the mastic to the wall like skim-coat plaster using a small plasterer's trowel, keeping the mastic even and about $\frac{1}{16}$ in. thick. The reverse side of the Micarta which has been previously sanded or treated to make for better bonding, should have a thin coat of mastic "buttered" on with a trowel.

The Micarta panels should then be placed on the wall and pressed down firmly or slapped with the palm of the hand. With a hand roller, start at one end of the panel and work gradually to the other end, rolling the entire surface until all of the air has been squeezed from behind the panel and perfect contact is made at all points between the Micarta and the mastic. Small pieces of waste molding can be snapped into the tracks at different points to hold the panels in place until the final piece of molding is cut and fitted.

of stud walls, 1 in. by 3 in. strips are nailed to the sides of the studs, projecting from the line of studs sufficiently to "furr" out the finished wall to any predetermined line such as the plaster line above wainscoting. These strips should be straight and true because they serve a dual purpose. Not only do they "furr" out the wall, but they are a means of straightening crooked studs and making a true plane for the wall surface.

Plywood about 3/8 in. thick is applied to the entire wall by nailing securely to the strips. Any other wall board that will provide satisfactory nailing material for the molding tracks can be used. In the case of masonry walls, the plywood can be nailed directly to the grounds or whatever blocking is provided in the walls for that purpose.

Micarta panels should be set on the plywood with Westinghouse Compound or mastic No. 6499 in the same manner as described for type "A" construction. Wherever joints occur in Micarta, leave at least $\frac{3}{32}$ in. clearance for expansion and contraction of the wall and also to provide space for nailing the molding track in place. If this is done it will be unnecessary to drill the Micarta for each nail. Small nails can be driven

along the edges of each panel to keep it in place and prevent slipping until the mastic has time to set.

It should be noted in the drawings of type "B" construction that the metal molding tracks are nailed in place after the Micarta panels have been installed. Since the plywood base provides nailing material at any point, these molding tracks can be nailed on the surface of the Micarta according to any desired pattern. After the track is nailed in place the finish-strip of molding is cut, fitted, and snapped into place, concealing all methods of fastening. In applying these moldings, it will be necessary to drill the Micarta with a push drill wherever a nail is to be driven, unless the molding is to cover a joint. These holes must be at least one-half again as large as the nail in order to give sufficient clearance for expansion and contraction.

In covering an old wall, the plywood can be nailed over the surface to straighten the wall and provide nailing material at any point for metal molding. If desired, this same type of molding can be fastened to grounds set into the wall as described under type "A" construction.

Starting at the floor line, install the first tier of panels or baseboard, as the case may require, and work upward, tier by tier, installing molding as it is needed. Sometimes a grooved or rabbetted baseboard is used with the lowest tier of panels resting in the rabbet. In this case, the baseboard should be installed first. In other cases the lowest tier rests directly on the floor, and the baseboard is set in front of it. Where the bottom panel is to rest on the floor, it is installed first, shimmed if necessary to level the top edge, and the baseboard can be installed at any later time.

Be certain to allow room for expansion and contraction around each panel, $\frac{1}{16}$ in. on each side and $\frac{1}{8}$ in. at the top. There will, of course, be no clearance space at the bottom of the panel since it is supported by the molding.

micarta Baseboards — Micarta baseboards consist of plyboard to the face and edge of which is veneered with $\frac{1}{16}$ -in. Micarta. Baseboards are available in practically any desired width. A special type of concealed drive-nail, as shown in the drawings, is supplied with the baseboard. These are driven into the studding or panel behind the baseboard, using a driving tool made from ¼-in. pipe. The driving tool leaves about half of the nail exposed. The baseboard is driven onto these nails. Soft paper and a wooden block are used to cushion against hammer blows.

with Micarta wall covering may be metal molding or strips of Micarta veneered material similar to that of baseboards. These Micarta rails and caps will be supplied by Westinghouse on order or they can be constructed locally. The same installation methods apply as those described for baseboards.

GENERAL—In all types of construction make sure that wiring, piping connections, and other projections are in place and that outlet boxes for wiring, recessed soap dishes and other built-in accessories are lined up so as to be flush with the Micarta. Accessories such as towel bars, recessed soap holders, and the like requiring support in the wall must have their own grounds or blocking in place before the wall surface is applied to the structure.

Openings for fittings should be accurately located and marked on the Micarta with a sharp pointed tool. Drill the holes to start the saw and then cut with a fine-toothed compass-saw or hack saw. Edges should be filed. Make the openings with ½ in. clearance all around for expansion and contraction. Rectangular openings must not have sharp corners. The radius must be at least ¼ in.

Panels of Micarta Plyboard, Preswood, and Wemcore can be drilled, cut and planed with ordinary carpenter's hand tools. However, portable power equipment will speed up the work.

Always handle Micarta carefully. Protect the finish with packing paper while handling or working on it. Never lay it face down on rough surfaces, or slide the finished surface across any other surface. After an installation is completed, finger prints and glue marks should be cleaned off with a soft cloth saturated with benzine. Finally, the surface should be washed down with soap and water and the brilliance of the finish brought out by polishing with a clean, dry, soft cloth.

Micarta sheets and panels must not fit tightly against the molding tracks, but must have about $\frac{1}{16}$ in. clearance on each side. This is for expansion. For the same reason molding or stripping must not be nailed to the wall through the Micarta unless ample clearance is allowed at each nail. Where Micarta is to be fastened to the wall with screws or nails, drill the holes in the Micarta $\frac{1}{16}$ in. larger in diameter than the diameter of the nail or screw.

The entire alignment of an installation depends on grounds and it is important to have them right. In glued construction they carry the molding only. In paneled construction they carry the entire weight of the wall covering. The location of the grounds should be carefully laid out beforehand to fit the design.

If the Micarta is inlaid with design in metal, the inlaid portions must be protected. Any contact with casein glue will attack the metal. Such protection can be accomplished by care in keeping the glue away from the inlaid portion of the Micarta, but if this is not practicable, the inlay should be protected by some form of covering. One acceptable method is to give it a coat of clear pyroxylin lacquer, which can be removed later with acetone or lacquer thinner.

Some of the Micarta sheets or panels may not require cutting and will be used full size. Those which must be cut should be laid face up on the work table, preferably with a sheet of paper over them to protect the surface. Keep the edge to be sawed close to the workbench to avoid cracking and splitting.

The drawings show conditions in a typical bathroom. However, these details are the same for all interior wall and ceiling work. Section "A-A", type "A" and type "B" construction is a cross section of a wall elevation from floor to ceiling showing details at the base, intermediate panels, top of wainscoting, and the angle at the ceiling if Micarta is carried to ceiling height and over the ceiling.

The same molding that is used at wainscot height can be used for trim at the door and window jambs as shown in detail Section "B-B".

Detail at Section "C-C" shows construction at corners and angles. Detail at "E" shows the construction where the bath tub meets the wall. In type "A" construction the ground strip should be beveled so that it fits tightly on the wall side and is open in the front to provide a groove in which mastic compound or calking can be forced to provide a water-proof joint.

Similarly, in type "B" construction the ply-wood wall-base is beveled on the wall side and the joint calked in the same manner. In either case after the Micarta is applied and before the finish molding is snapped into place, there will be additional space in which more calking can be placed. After this space is completely filled, the molding is snapped into place and excess calking material cleaned away. The tracks for these moldings should be so located as to cause the finish molding to fit snugly against the tub. If there are any uneven spots or bumps on the tub,

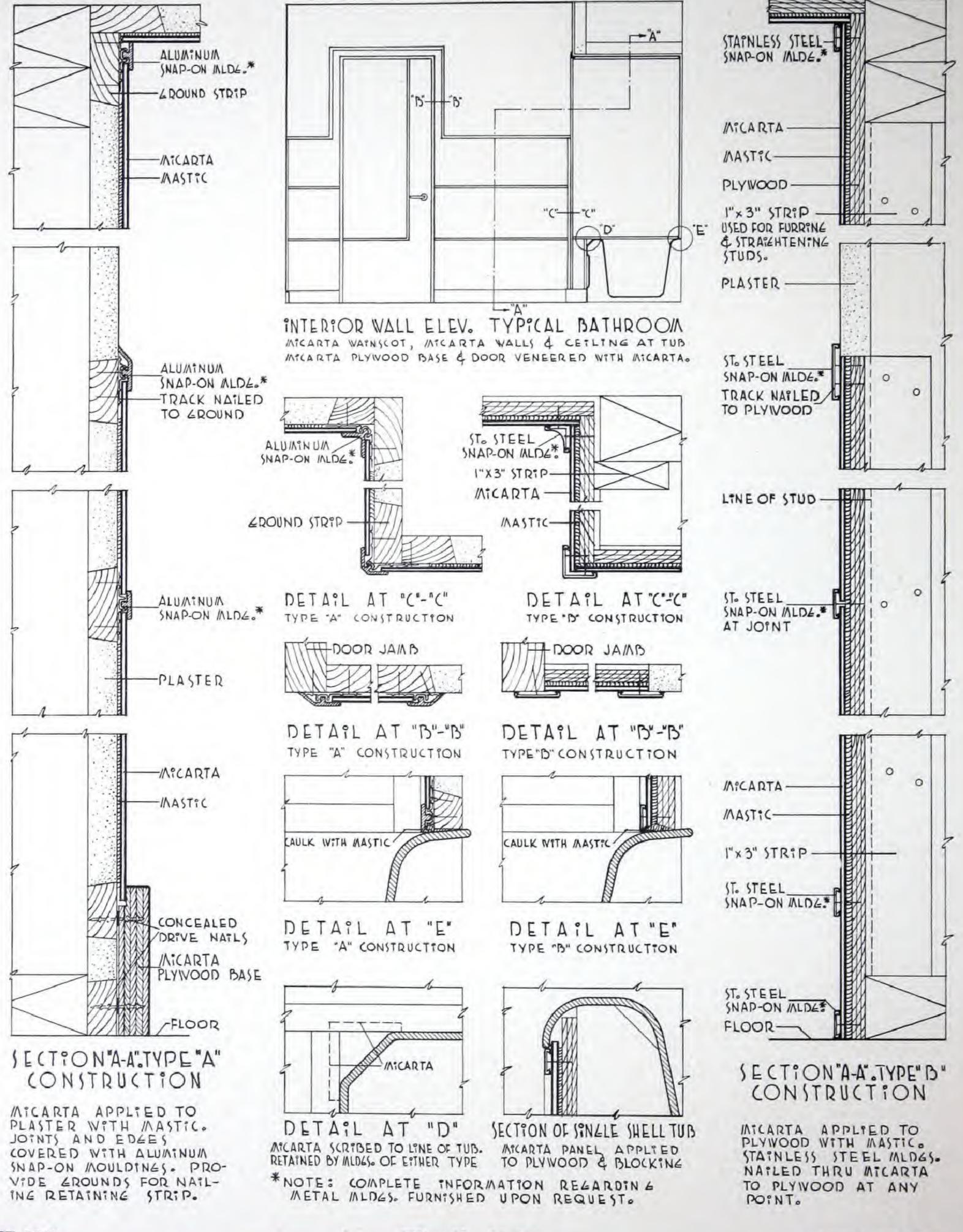
the molding can be scribed and filed to make it fit neatly. Should there be settling at any time in the tub or building causing this joint to open, the molding can be pried off and the joint repaired with calking cement.

Detail at "D" shows Micarta scribed to the level or radius of the tub and held in position by the moldings which are fitted to sides and top of the tub. This piece can be cut out with a saw and filed to an accurate fit. It should be cemented to the wall with wall glue.

In new work where a Micarta panel is desired for a tub front or in old work where a single-shell tub already exists, the Micarta can be applied as shown in the detail "Section of Single-Shell Tub". Wooden studs or blocking can be fitted to the front of the tub allowing only enough space between the rolled rim of the tub and the roughing to accommodate the plywood backing, mastic compound, and Micarta. These studs are nailed to the floor, but are held in place at the top by wedging the plywood backing into the curve of the rolled rim. To complete the work, molding is nailed to the panel at the edge of the rolled rim.

The metal moldings generally used with Micarta wall panels consist of two pieces; the track or retaining strip which is nailed to the wall either before or after the Micarta is applied, depending on type of molding used, and the finish molding which is snapped onto the track, concealing all nails.

* MICARTA WAINSCOT SECTION



DMF 5641

Filing No. 63-520

Printed in U.S.A.

Decorative

MEARIA

IN TRANSPORTATION. LAND

SEA · AIR



Bathrooms in all First Class Staterooms on the "S. S. Queen of Bermuda" have Micarta Paneling.

"Transportation" may live up to its name by merely getting us from one place to another but "modern transportation" must do more. It must carry us with speed, reliability and comfort. Attractive surroundings are as characteristic of the truly modern railway coach, transport plane, or ocean liner as are its facilities for conquering time and space.

Modern trends in transportation have made way for many new and improved construction materials with which engineers may increase safety, reduce weight,

beautify design, and achieve many other improvements in passenger carrying equipment. New alloy steels, aluminum, rubber, phenolic materials and many others have hurried the progress of the transportation industry.

Decorative Micarta, a phenolic material, has gone aboard many of the latest trains, ships and aircraft, not in an experimental capacity, but as a proved material that fitted in with the basic pattern of the newest creations. It has displaced certain traditional finishing materials, many of which limited

decorative possibilities and lacked durability.

The latest trend in rail transportation is toward the light-weight stream-line train. Here Micarta is in perfect step with the requirements of this type of design. Its great strength, flexibility, permanence of finish, variety of pattern and color, and easy workability make it an ideal, beautiful finishing material. And from the standpoint of first cost and upkeep it is even more desirable. It must be remembered that Micarta's hard, smooth surface will stand the wear far longer than varnished wood or lacquered metal.

Staterooms and smoking rooms on the "S. S. Scanyork" and three sister ships are paneled with Micarta.





New coaches recently placed in service by the New York, New Haven and Hartford Railroad have Micarta window sills.

Recent developments in the marine field are emphatically placing a premium upon the matter of safety from fire hazard. Micarta is highly heat resistant, has definitely proved insulation characteristics, and, because of its density, can be used in much thinner sections than most other finishing material. It has already been used successfully in type "B" bulkheads in several sea-going vessels and it is recommended to naval architects for these and other types of interior decoration in passenger ships.

The methods of installation aboard ship differ somewhat from those in commercial types of architecture. For instance, most interior paneling in ships is usually specified as one inch thick. This thickness can be built up most economically by using fire resistant treated plywood with $\frac{1}{16}$ in. Micarta veneer on each side.

While fire resistance of Micarta is important, its decorative possibilities must not be overlooked. New

designs can be achieved and conventional wood, marble and painted effects can be forgotten.

In aircraft construction the chief use for decorative Micarta is in cabin linings. These are extremely thin sheets veneered to various curved surfaces by caul pressure types of application. Examples of these interiors are to be found in some of the recently constructed transport planes.

Micarta is not new to the aviation industry. Synthetic resinous materials have been used for airplane parts for years. The majority of planes flying the national airways are equipped with Micarta control pulleys, and in the early days of the industry Micarta propellers were preferred to wood.

The principal advantages of Micarta for aviation are extreme lightness of weight, great strength, fire resistance and decorative variety.

Application data are available to those interested in recommended installation methods.

MICARTA APPLICATION DATA

RAILWAY CARS

PASSENGER SHIPS . . TRANSPORT PLANES

RAILWAY CARS

PREPARATION OF OLD CAR-All existing trims are removed down to the steel super-structure or skeleton of the car. Micarta Wemcore panels $\frac{5}{32}$ in. to $\frac{11}{32}$ in. thick are applied directly to the superstructure by means of metal retaining molding for the sides of the car and $\frac{1}{16}$ -in. Micarta is formed to the curve of the ceiling and held in place by suitable metal molding. There are several types and designs of metal molding that can be used for the different locations in a car; i.e., corners, angles and flat wall panels. Some of the moldings are applied by screws directly through the face of the molding. Others are applied by attaching a track with screws over the Micarta joints, and the finish moldings are snapped into this track. By using this snap-on molding, the screw heads are concealed by the finished molding.

WINDOW TREATMENT—Micarta window sills are manufactured of a Micarta veneer over a Plywood or solid hardwood core and form the base for the erection of the Micarta panels on the window jambs.

WALL PANELS—Micarta Wemcore for panels is received in stock sizes and on the job to fit the openings. In cutting these panels, about $\frac{1}{16}$ in. on each side is allowed for fitting. Screw holes are drilled into the Micarta panels to align with holes in the superstructure, and the sheets are aligned beginning at the bottom line of the sill by pegging them into place. Permanent fastening is then made by self-threading screws. Space is allowed between sheets for the attachment of the molding.

Before the molding is put in place the joints between panels should be carefully calked with mastic, in order to take up any play, after which the metal molding is put in place and screwed firmly to the superstructure of the car.

LIGHTING—Provision is made at the header for a trough in which lighting of the indirect or semi-indirect type can be mounted. The super-structure consisting of metal paneling is tapped so that Micarta panels can be put in place, calked, and covered with suitable angle corners molded as described above. These molds should be fastened firmly in place with the self-threading type of screw.

CEILING—The use of $\frac{1}{16}$ -in. Decorative Micarta is recommended for the ceiling work in passenger cars because of the curvature of the ceiling surface. This type of Micarta can readily

be shaped to the proper curvature. Stock lengths of Micarta panels will span the entire width of the ceiling.

Molding strips of metal are used every four feet to cover cross-wise joints and support the Micarta sections. The use of additional molding strips between these sections is optional.

PASSENGER SHIPS

STATEROOM AND CABIN ENCLOSURES—The use of Micarta in the erection of bulkheads has created interest because of its light weight and reduction of fire hazard when used with fire-treated Plywood cores and metal channel posts.

The superstructure is constructed as shown in the drawing with steel channel posts into which the Micarta Plywood panels are fitted. These channel posts are held in place by sill and top runners. Before the panels are set they are treated with mastic in order to take up any play between structural members and panels. The channel posts between panels are either decorated or covered with metal or treated-wood moldings to complete the finished surface.

OVERHEADS—The treatment of overheads in staterooms and public spaces is carried out in the same manner as the bulkhead panel operation mentioned above. Metal channels are fastened to the underside of deck beams.

The channels to receive the Micarta are partially filled with mastic and the Micarta panels erected as described above for bulkhead work.

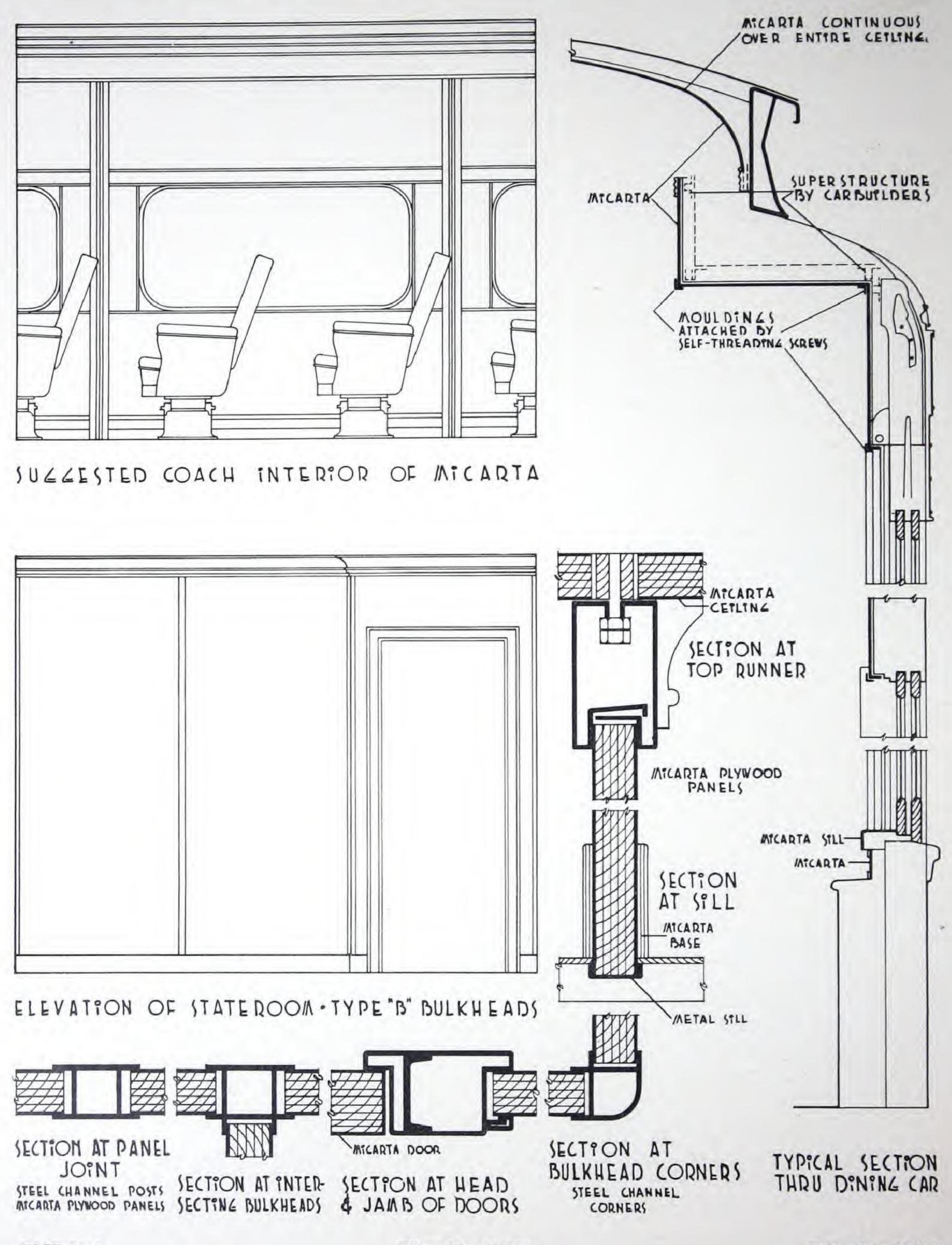
The channels are then decorated or covered with metal or treated wood molding which is screwed into place.

TRANSPORT PLANES

The use of thin Micarta sheets as cabin linings in transport planes is accomplished by attaching the sheets of Micarta directly to the ribbing of the ship by means of small self-threading screws and light-weight, narrow aluminum moldings. The sheets are cut to the proper size and held in the required curved position by blocking. The screws are then inserted and the moldings put in place.

Micarta trim for doors and openings are built in the factory. Micarta for the cabin ceiling is handled in the same manner as the side-wall installation, and is held in place by blocking. Screws are then inserted into the superstructure and screws and joints are covered by suitable narrow metal molding.

METHODS OF INSTALLATION FOR MICARTA



DMF 5643

Filing No. 63-520

Printed in U.S.A.

Decorative

MICARTA

IN HÖMES

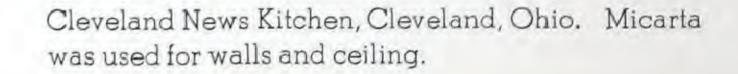


Micarta fireplace in the "Home of Tomorrow", Mansfield, Ohio.

The modern note in individual residence architecture is without question that of convenience. In this respect the design of American homes has made rapid advancement in the last few years. Houses are being built around the convenience of living in them rather than according to the tradi-

shapes and sizes are being applied and all roofs do not necessarily have peaks nor are all windows equally spaced around the walls. The arrangement is developed to suit the personal requirements of a family and to fit in with the physical charac-

Kitchen in the "Home of Tomorrow", Mansfield, Ohio. Walls, ceiling, and inlaid doors at the center are of Micarta.







Micarta paneled bathroom at Ventnor, New Jersey. Designed and installed for Mrs. A. W. Robertson.

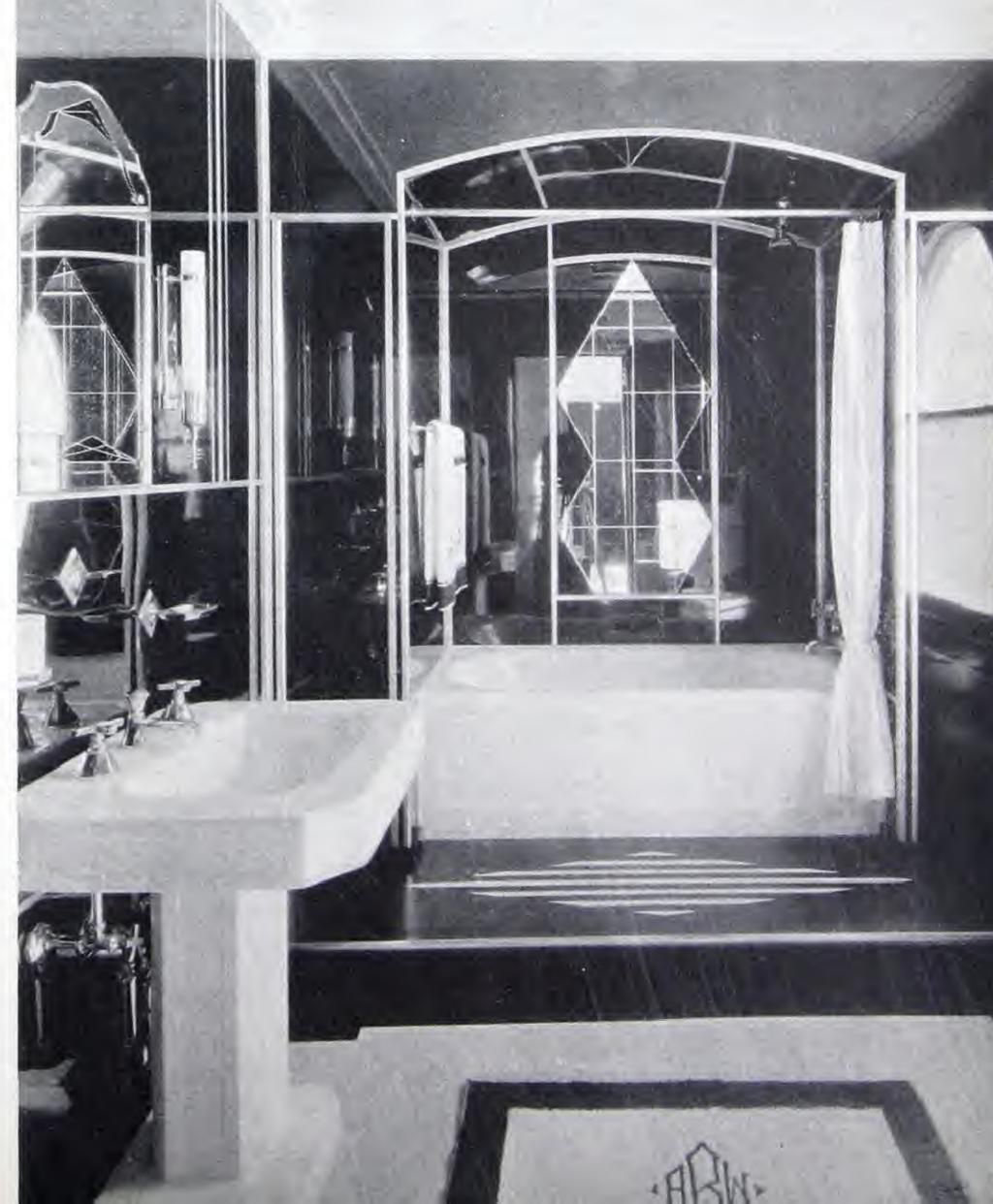
teristics of the location. This trend has resulted in decorative principles and design being adopted on a far broader basis than ever before.

The development of kitchens, bathrooms, play rooms and game rooms in the modern home opens up an entirely new and very broad field for decorative Micarta. Application data for the installation of wall paneling include simple designs wherein the use of moldings become an integral part of the design and enhances the beauty of the installation in a definite way rather than being merely a mechanical fulfillment of practical requirements.

A typical example of the use of decorative Micarta is in the Westinghouse "Home of Tomorrow" at Mansfield, Ohio and in the Cleveland News Kitchen, Cleveland, Ohio.

The bathroom in the modern residence is assuming more and more importance from a decorative standpoint. The average small to medium size residence for the average family will now have its master bathroom, its guest bathroom, as well as a bath in the servants' guarters. Typical examples









◆Micarta bathroom at the home of Mr. G. J. Pettits, Peek-skill, New York.

of the execution of this type of bathroom construction are shown here.

Compared with other materials that have been used for kitchen and bathroom walls, Micarta has many distinct advantages. Usually, these rooms are subjected to moist, steamy, atmosphere that very quickly destroys the finish and appearance of most materials. Micarta stands up under these conditions. It retains its lustre, color, and new appearance.

Aside from the kitchen and bathroom, Micarta may be used in breakfast nooks, for table tops, window seats, and for fire place trim and mantles and many other places.

Micarta is especially valuable in remodeling and modernization work. It is easy to apply to plastered walls and can be cut and fitted with ordinary tools.

After all has been said, the most convincing proof that Micarta is an improvement over many conventional materials used in the construction of homes is that it has been used and is being used right along, with great success, for the purposes mentioned.

Application data are available to those interested in recommended installation methods.

DMF 5644 Filing No. 63-520

[◄]An inexpensively finished Micarta bathroom at Wilkinsburg, Pennsylvania.

* Decorative

MEARTH

FOR EXTERIORS



The A. B. Dick Exhibit at A Century of Progress, Chicago. Micarta paneling was used throughout.

Today none can deny that an attractive store front is a valuable sales aid. Realization by merchants of its importance in attracting business has launched a new period in store-front construction. The new fronts and exteriors are characterized by neat simple lines; the materials being beautiful, permanent and

more adaptable for illumination. The demand for this sort of thing has naturally caused all materials to be resifted with the hope of finding something new or different. Forward-looking architects were quick to recognize the possibilities of Micarta and to begin using it for modern store fronts and exterior signs,



Micarta front, Thompson Restaurant, 1823 Broadway, New York City.

because of its excellent adaptability to such applications. It is becoming the most acceptable material for store fronts and signs because of its great strength, first cost, economy, beauty and originality of design; because it is easily specified and easily installed; and because of its resistance to the natural action of sunshine and weather, as well as its freedom from breakage.

Not all grades of Micarta are suitable for exterior work. Where this consideration is ignored, a satisfactory result cannot be expected. Our recommendations for exterior use are as follows:

Grade 8C36, black, gloss or satin finish asbestos core panels in $\frac{1}{4}$ in. to $\frac{7}{16}$ in. thick; Grade 8C34, black and gold marble, gloss or satin finish asbestos core panels in $\frac{1}{4}$ in. to $\frac{7}{16}$ in. thick; Grade 8C58, Cardiff green, gloss or satin finish asbestos core panels in $\frac{1}{4}$ in. to $\frac{7}{16}$ in. thick; Grade 8C68, Chinese red, gloss or satin finish asbestos core panels in $\frac{1}{4}$ in. to $\frac{7}{16}$ in. thick; Grade 8C20, deep green, gloss or satin finish asbestos core panels in $\frac{1}{4}$ in. to $\frac{7}{16}$ in. thick; and Grade 8C29, gold web, gloss or satin finish asbestos core panels in $\frac{1}{4}$ in. to $\frac{7}{16}$ in. thick.

Illustrations show the type of design most readily



Micarta paneled exterior John B. Shorter & Son Funeral Home, Baltimore, Maryland.

adaptable to the use of Micarta, with its bright sheen and modernistic attractive appearance particularly when used in connection with the block letter sign and the Neon light. Metal letter inlays and other designs are especially attractive and practical.

When their cost is considered, few other materials for store fronts can measure up to Micarta in durability, glossy finish, and simplicity of installation. Whether the building is to be newly constructed or whether it is to be remodeled, Micarta has many advantages as a store front material—advantages proved by existing installations in all parts of the country.

Complete application data are available to those interested in recommended installation methods.

Kirby Shoe Store, Pittsburgh, Pennsylvania. Letters are metal, inlaid in green Micarta.





Micarta store front with metal-inlay letters. Atlantic and Pacific Tea Company, Crawford, Connecticut.

MICARTA APPLICATION DATA

EXTERIORS

MICARTA Asbestos paneling used for exterior work is extremely hard and cannot be cut to size on the job without special abrasive equipment. It is therefore recommended that plans and elevations of store fronts be studied with special care so that the necessary pieces of paneling can be cut to exact size at the factory. Micarta Wemcore in various thicknesses can be used for exterior work. This can be cut to size on the job with a hollow-ground circular power saw or fine-toothed hand saw.

BULKHEAD CONSTRUCTION—When Micarta is installed on bulkheads it is well to remember that it becomes a construction material and erection is best accomplished by the use of butt joints covered with heavy metal moldings held in place by screws.

In the event the moldings do not harmonize well, the Micarta panels can be erected by means of screws with rosettes.

TREATMENT AND WATER PROOFING—It is recommended that a groove be cut out of the concrete base at the floor line of the bulkhead and that the Micarta panels be dropped down 1/4 in. into the groove. The rough surface of the bulkhead should be treated by means of water-proof paint before the Micarta is erected. The surface can then be spotted with mastic and the Micarta panels fastened into place. The joints should be filled with water-proof mastic and troweled down to a smooth finish. Upon comple-

tion of the erection work the groove at the floor line should be filled with packing and waterproofed. If metal molding is used at the floor line, the calking can be inserted before the molding is put in place as shown on the drawing.

MITERED JOINTS—Angle joints can be mitered by showing these requirements on drawings submitted to the factory. In any case, the miter shown is cut on a slightly larger angle than that actually required in order to permit filling the joint with mastic. This also insures a neatly fitted miter.

Where miters are not used, the corners should be covered by metal corner moldings which can be screwed into place, or by snap-on moldings used as shown on the drawings.

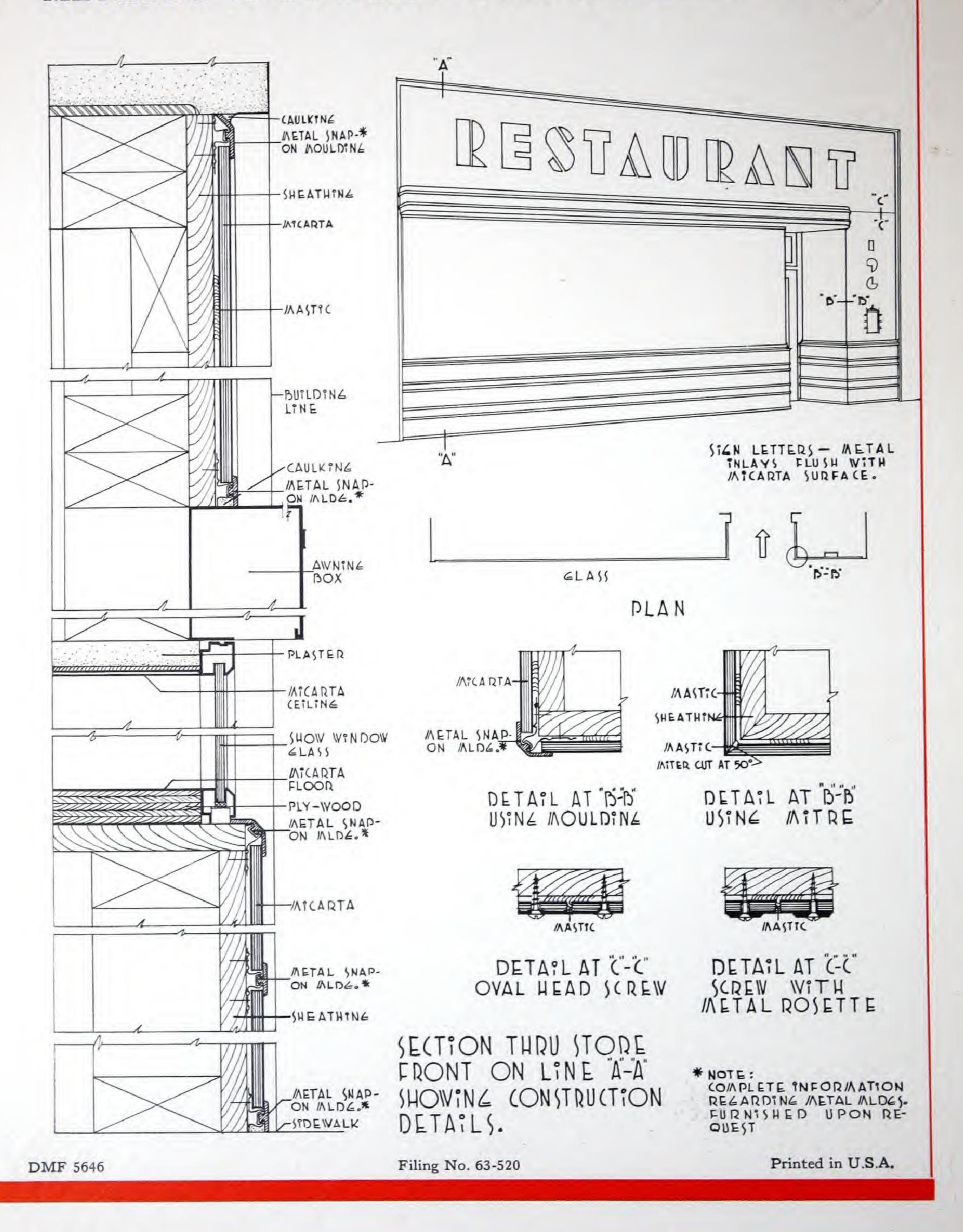
the fact that Micarta paneling is practically inert it is subject to negligible contraction and expansion due to heat or moisture. It is there fore necessary to make special provisions in erecting Micarta for exterior work to take care of the natural contraction and expansion of the bulkhead behind the Micarta and the building itself, and any settling of the building and other similar natural causes. In order to do this all holes for screws should be tapped about one-half again as large as required and the screws should not be set up too tightly.

If these precautions are taken no trouble should be experienced with Micarta joints on exterior applications.



Micarta, being an electrical insulator, is especially suitable for electric signs. This front, designed and installed by the Joseph Engineering Corporation, is located in New York City.

* METHODS OF INSTALLATION FOR MICARTA



(SEARM PAGE)







